WHAT IS CLAIMED IS:

1. A method of supporting at least an interlace scan mode and a sequential scan mode in a single imager for use in a video camera wherein the imager includes a CCD portion, the method comprising the steps of:

5   (a) in response to a mode selection signal, causing said CCD portion to generating a corresponding one of an interlace scan image signal and a sequential scan image signal, said sequential scan image being comprised of 2N scan lines, where N is the number of scan lines of an image to be obtained;

10   (b) synchronizing each pair of odd lines and even lines of a given image signal;

      (c) passing said interlace scan image signal in said interlace scan mode and said synchronized pair of odd and even lines of said given image signal in other scan mode;

15   (d) doing ordinary image regulations such as contour correction in parallel to a first input image signal and a second input image signal to provide a first regulated image signal and a second regulated image signal;

      (e) in response to said mode selection signal indicating said sequential scan mode, generating a new sequential scan image signal from

20 said first and second regulated image signals, which are regulated odd and even line signals in the mode;

      (f) in response to said mode selection signal indicating said sequential scan mode, adding said first and second regulated image signals (i.e., said regulated odd and even line signals) together to generate a new

25 interlace scan image signal; and

      (g) outputting a regulated interlace scan image signal in said interlace scan mode and said new interlace scan image signal in said sequential scan

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mode.

2. A method as defined in claim 1, wherein the method further supports a dynamic range-widening scan (WS) mode, wherein said step (a) includes the step of causing said CCD portion to generating a corresponding one of an interlace scan image signal, a sequential scan image signal and a WS image signal of 2N lines, every other line of WS image signal being exposed longer than adjacent lines of said WS image signal, and wherein the method further comprises the steps of:

(h) passing said WS image signal to said step (b) to provide a second synchronized pair of odd and even lines of said WS image signal;

(i) generating a dynamic range-widened image signal from said second synchronized pair;

(j1) in said sequential scan mode, passing said synchronized pair of odd and even lines of said sequential scan image signal to said step (d);

(j2) in said interlace scan mode, passing said interlace scan image signal to said step (d) as said first input image signal; and

(j3) in said WS mode, passing said dynamic range-widened image signal to said step (d) as said first input image signal, wherein:

said step (g) outputs a regulated dynamic range-widened image signal in said WS mode.

3. A method of supporting at least a dynamic range-widening scan mode and a sequential scan mode in a single imager for use in a video camera wherein the imager includes a CCD portion, the method comprising the steps of:

(a) in response to a mode selection signal, causing said CCD portion

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to generating a corresponding one of a dynamic range-widening scan (WS) image signal of 2N lines and a sequential scan image signal of 2N lines, N being the number of scan lines of an image to be obtained, and every other line of said WS image signal being exposed longer than adjacent lines of said

5 WS image signal;

(b) synchronizing each pair of odd lines and even lines of a given image signal;

(c) generating a dynamic range-widened image signal from said each pair of odd lines and even lines of said WS image signal in said WS mode;

10 (d) doing ordinary image regulations such as contour correction in parallel to a first input image signal and a second input image signal to provide a first regulated image signal and a second regulated image signal;

(e1) in said sequential scan mode, passing said synchronized pair of odd and even lines of said sequential scan image signal to said step (d);

15 (e2) in said WS mode, passing said dynamic range-widened image signal to said step (d) as said first input image signal;

(f) in response to said mode selection signal indicating said sequential scan mode, generating a new sequential scan image signal from said first and second regulated image signals, which are regulated odd and

20 even line signals in the mode;

(g) in response to said mode selection signal indicating said sequential scan mode, adding said first and second regulated image signals (i.e., said regulated odd and even line signals) together to generate a new interlace scan image signal; and

25 (h) outputting a regulated dynamic range-widened image signal in said WS mode and said new interlace scan image signal in said sequential scan mode.

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4. A method as defined in claim 1, wherein said step (d) includes the steps of:

in said sequential scan mode, calculating a first vertical contour correction value for each of a current odd line and a current even line of said sequential scan image signal by using 6 lines of data including said current odd and even lines in the center of the 6 lines;

in said interlace scan mode, calculating a second vertical contour correction value for a current line of said interlace scan image signal by using 5 lines of data including said current line in the center of the 5 lines; and

performing a vertical contour correction by using said calculated vertical contour correction value.

5. A method as defined in claim 2, wherein said step (d) includes the steps of:

in said sequential scan mode, calculating a first vertical contour correction value for each of a current odd line and a current even line of said sequential scan image signal by using 6 lines of data including said current odd and even lines in the center of the 6 lines;

in a mode other than said sequential scan mode, calculating a second vertical contour correction value for a current line of said first input image signal by using 5 lines of data including said current line in the center of the 5 lines; and

performing a vertical contour correction by using said calculated vertical contour correction value.

6. A method as defined in claim 3, wherein said step (d) includes the

steps of:

in said sequential scan mode, calculating a first vertical contour correction value for each of a current odd line and a current even line of said sequential scan image signal by using 6 lines of data including said current

5 odd and even lines in the center of the 6 lines;

in said WS mode, calculating a second vertical contour correction value for a current line of said WS image signal by using 5 lines of data including said current line in the center of the 5 lines; and

performing a vertical contour correction by using said calculated

10 vertical contour correction value.

7. An imager, for use in a video camera, which supports at least an interlace scan mode and a sequential scan mode, the imager comprising:

CCD means, responsive to a mode selection signal, for generating a

15 corresponding one of an interlace scan image signal and a sequential scan image signal, said sequential scan image being comprised of 2N scan lines, where N is the number of scan lines of an image to be obtained;

means for synchronizing each pair of odd lines and even lines of a given image signal;

20 means for passing said interlace scan image signal in said interlace scan mode and said synchronized pair of odd and even lines of said given image signal in other scan mode;

regulation means for doing ordinary image regulations such as contour correction in parallel to a first input image signal and a second input

25 image signal to provide a first regulated image signal and a second regulated image signal;

means, responsive to said mode selection signal indicating said

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sequential scan mode, for generating a new sequential scan image signal from said first and second regulated image signals, which are regulated odd and even line signals in the mode;

means, responsive to said mode selection signal indicating said

5   sequential scan mode, for adding said first and second regulated image signals (i.e., said regulated odd and even line signals) together to generate a new interlace scan image signal; and

means for outputting a regulated interlace scan image signal in said interlace scan mode and said new interlace scan image signal in said

10   sequential scan mode.

8. An imager as defined in claim 7, wherein the imager further supports a dynamic range-widening scan (WS) mode, wherein said CCD means includes means for generating a corresponding one of an interlace scan

15   image signal, a sequential scan image signal and a WS image signal of 2N lines, every other line of WS image signal being exposed longer than adjacent lines of said WS image signal, and wherein the imager further comprises:

means for passing said WS image signal to said synchronizing means to provide a second synchronized pair of odd and even lines of said WS

20   image signal;

means for generating a dynamic range-widened image signal from said second synchronized pair;

means for, in said sequential scan mode, passing said synchronized pair of odd and even lines of said sequential scan image signal to said

25   regulation means

means for, in said interlace scan mode, passing said interlace scan image signal to said regulation means as said first input image signal; and

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means for, in said WS mode, passing said dynamic range-widened image signal to said regulation means as said first input image signal, wherein:

said outputting means outputs a regulated dynamic range-widened
5   image signal in said WS mode.

9. An imager, for use in a video camera, which supports at least a dynamic range-widening scan mode and a sequential scan mode, the imager comprising:

10   CCD means, responsive to a mode selection signal, for generating a corresponding one of a dynamic range-widening scan (WS) image signal of 2N lines and a sequential scan image signal of 2N lines, N being the number of scan lines of an image to be obtained, and every other line of said WS image signal being exposed longer than adjacent lines of said WS image
15   signal;

means for synchronizing each pair of odd lines and even lines of a given image signal;

means for generating a dynamic range-widened image signal from said each pair of odd lines and even lines of said WS image signal in said WS
20   mode;

regulation means for doing ordinary image regulations such as contour correction in parallel to a first input image signal and a second input image signal to provide a first regulated image signal and a second regulated image signal;

25   means for, in said sequential scan mode, passing said synchronized pair of odd and even lines of said sequential scan image signal to said regulation means and for, in said WS mode, passing said dynamic range-

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widened image signal to said regulation means as said first input image signal;

means, responsive to said mode selection signal indicating said sequential scan mode, for generating, as an output of the imager, a new sequential scan image signal from said first and second regulated image signals, which are regulated odd and even line signals in the mode;

means, responsive to said mode selection signal indicating said sequential scan mode, for adding said first and second regulated image signals (i.e., said regulated odd and even line signals) together to generate a new interlace scan image signal; and

means for outputting a regulated dynamic range-widened image signal in said WS mode and said new interlace scan image signal in said sequential scan mode.

10. An imager as defined in claim 7, wherein said regulation means includes:

means for, in said sequential scan mode, calculating a first vertical contour correction value for each of a current odd line and a current even line of said sequential scan image signal by using 6 lines of data including said current odd and even lines in the center of the 6 lines;

means for, in said interlace scan mode, calculating a second vertical contour correction value for a current line of said interlace scan image signal by using 5 lines of data including said current line in the center of the 5 lines; and

means for performing a vertical contour correction by using said calculated vertical contour correction value.

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11. An imager as defined in claim 8, wherein said regulation means includes:

means for, in said sequential scan mode, calculating a first vertical contour correction value for each of a current odd line and a current even line of said sequential scan image signal by using 6 lines of data including said current odd and even lines in the center of the 6 lines;

means for, in a mode other than said sequential scan mode, calculating a second vertical contour correction value for a current line of said first input image signal by using 5 lines of data including said current line in the center of the 5 lines; and

means for performing a vertical contour correction by using said calculated vertical contour correction value.

12. An imager as defined in claim 9, wherein said regulation means includes:

means for, in said sequential scan mode, calculating a first vertical contour correction value for each of a current odd line and a current even line of said sequential scan image signal by using 6 lines of data including said current odd and even lines in the center of the 6 lines;

means for, in said WS mode, calculating a second vertical contour correction value for a current line of said WS image signal by using 5 lines of data including said current line in the center of the 5 lines; and

means for performing a vertical contour correction by using said calculated vertical contour correction value.

13. An integrated circuit, for use in a video camera, which processes an image signal supplied from a CCD portion of the camera in a specified one

of at least an interlace scan mode and a sequential scan mode wherein the CCD portion is capable of generating at least an interlace scan image signal and a sequential scan image signal, the sequential scan image being comprised of 2N scan lines, where N is the number of scan lines of an image

5   to be obtained, the integrated circuit comprising:

means for synchronizing each pair of odd lines and even lines of a given image signal;

means for passing said interlace scan image signal in said interlace scan mode and said synchronized pair of odd and even lines of said given

10   image signal in other scan mode;

regulation means for doing ordinary image regulations such as contour correction in parallel to a first input image signal and a second input image signal to provide a first regulated image signal and a second regulated image signal;

15   means, responsive to said mode selection signal indicating said sequential scan mode, for generating a new sequential scan image signal from said first and second regulated image signals, which are regulated odd and even line signals in the mode;

means, responsive to said mode selection signal indicating said

20   sequential scan mode, for adding said first and second regulated image signals (i.e., said regulated odd and even line signals) together to generate a new interlace scan image signal; and

means for outputting a regulated interlace scan image signal in said interlace scan mode and said new interlace scan image signal in said

25   sequential scan mode.

14. An integrated circuit as defined in claim 13, wherein the imager

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further supports a dynamic range-widening scan (WS) mode, wherein the CCD portion can further generate a WS image signal of 2N lines, every other line of WS image signal being exposed longer than adjacent lines of said WS image signal, and wherein the integrated circuit further comprises:

5   means for passing said WS image signal to said synchronizing means to provide a second synchronized pair of odd and even lines of said WS image signal;

means for generating a dynamic range-widened image signal from said second synchronized pair;

10   means for, in said sequential scan mode, passing said synchronized pair of odd and even lines of said sequential scan image signal to said regulation means

means for, in said interlace scan mode, passing said interlace scan image signal to said regulation means as said first input image signal; and

15   means for, in said WS mode, passing said dynamic range-widened image signal to said regulation means as said first input image signal, wherein:

said outputting means outputs a regulated dynamic range-widened image signal in said WS mode.

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15. An integrated circuit, for use in a video camera, which processes an image signal supplied from a CCD portion of the camera in a specified one of at least a dynamic range-widening scan mode and a sequential scan mode wherein the CCD portion is capable of generating at least a dynamic range-

25   widening scan (WS) image signal of 2N lines and a sequential scan image signal of 2N lines, N being the number of scan lines of an image to be obtained, and every other line of said WS image signal being exposed longer

than adjacent lines of said WS image signal, the integrated circuit comprising:

means for synchronizing each pair of odd lines and even lines of a given image signal;

means for generating a dynamic range-widened image signal from
5 said each pair of odd lines and even lines of said WS image signal in said WS mode;

regulation means for doing ordinary image regulations such as contour correction in parallel to a first input image signal and a second input image signal to provide a first regulated image signal and a second regulated
10 image signal;

means for, in said sequential scan mode, passing said synchronized pair of odd and even lines of said sequential scan image signal to said regulation means and for, in said WS mode, passing said dynamic range-widened image signal to said regulation means as said first input image
15 signal;

means, responsive to said mode selection signal indicating said sequential scan mode, for generating, as an output of the imager, a new sequential scan image signal from said first and second regulated image signals, which are regulated odd and even line signals in the mode;

20 means, responsive to said mode selection signal indicating said sequential scan mode, for adding said first and second regulated image signals (i.e., said regulated odd and even line signals) together to generate a new interlace scan image signal; and

means for outputting a regulated dynamic range-widened image
25 signal in said WS mode and said new interlace scan image signal in said sequential scan mode.

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16. An integrated circuit as defined in claim 13, wherein said regulation means includes:

means for, in said sequential scan mode, calculating a first vertical contour correction value for each of a current odd line and a current even line of said sequential scan image signal by using 6 lines of data including said current odd and even lines in the center of the 6 lines;

means for, in said interlace scan mode, calculating a second vertical contour correction value for a current line of said interlace scan image signal by using 5 lines of data including said current line in the center of the 5 lines; and

means for performing a vertical contour correction by using said calculated vertical contour correction value.

17. An integrated circuit as defined in claim 14, wherein said regulation means includes:

means for, in said sequential scan mode, calculating a first vertical contour correction value for each of a current odd line and a current even line of said sequential scan image signal by using 6 lines of data including said current odd and even lines in the center of the 6 lines;

means for, in a mode other than said sequential scan mode, calculating a second vertical contour correction value for a current line of said first input image signal by using 5 lines of data including said current line in the center of the 5 lines; and

means for performing a vertical contour correction by using said calculated vertical contour correction value.

18. An integrated circuit as defined in claim 15, wherein said

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regulation means includes:

means for, in said sequential scan mode, calculating a first vertical contour correction value for each of a current odd line and a current even line of said sequential scan image signal by using 6 lines of data including said

5   current odd and even lines in the center of the 6 lines;

means for, in said WS mode, calculating a second vertical contour correction value for a current line of said WS image signal by using 5 lines of data including said current line in the center of the 5 lines; and

means for performing a vertical contour correction by using said

10   calculated vertical contour correction value.